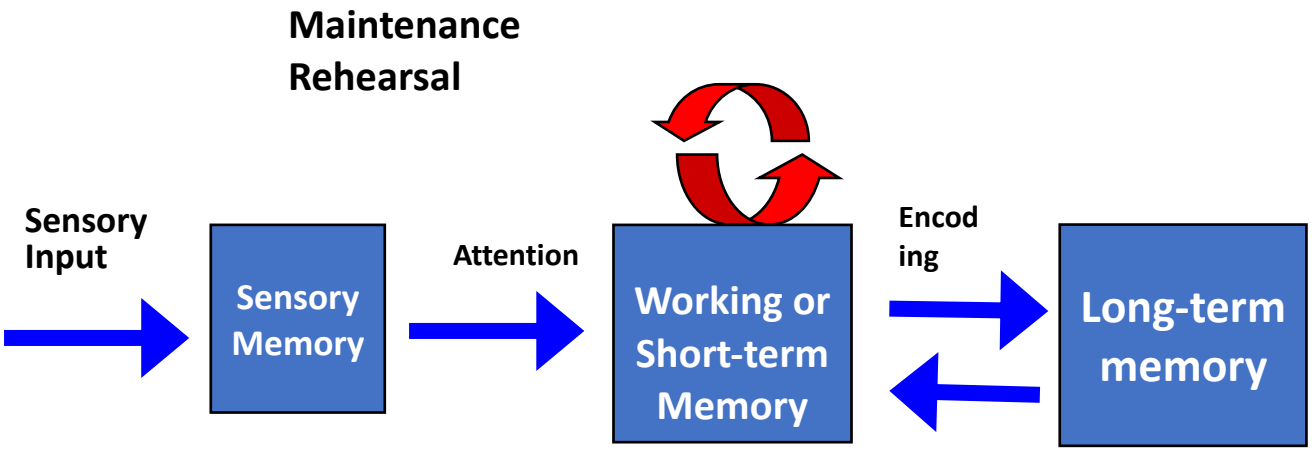
STAGES OF MEMORY



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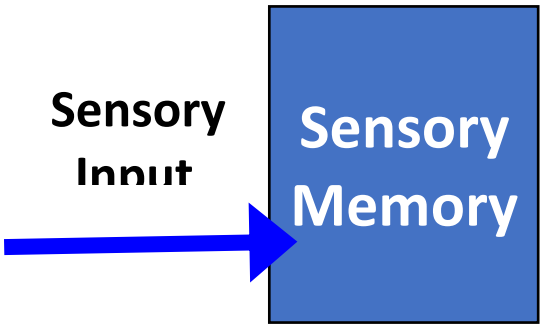
SENSORY MEMORY



Function —process for basic physical characteristics

Capacity—large

- can hold many items at once

Duration—very brief retention

- .3 sec for visual info
- 2 sec for auditory info

Divided into two types:

- iconic memory–visual information
- echoic memory– auditory information

Attention is needed to transfer information to working memory

SHOUT
SHARE
IT

Sensory memory preserves information in its original sensory form for a brief time, usually only a fraction of a second. Sensory memory allows the sensation of a visual pattern, sound, or touch to linger for a brief moment after the sensory stimulation is over. In the case of vision, people really perceive an afterimage rather than the actual stimulus.

The brief preservation of sensations in sensory memory gives you additional time to try to recognize stimuli. However, you'd better take advantage of sensory storage immediately because it doesn't last long. In a classic experiment, George Sperling (1960) demonstrated that the memory trace in the visual sensory store decays in about one-quarter of a second. There is some debate about whether stimulus persistence really involves *memory storage* (Nairne & Neath, 2013). Some theorists view it as an artefact of the perceptual processing of incoming stimuli that is attributable to excitatory feedback in specific N neural circuits (Francis, 1999). In other words, stimulus persistence may be more like an echo than a memory.

Types of sensory memory

1) **Visual sensory memory—**brief memory of an image or icon. Also called iconic memory
2) **Auditory sensory memory**—brief memory of a sound or echo. Also called echoic memory .**Auditory sensory memories** may last a bit longer than visual sensory memories

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George Sperling

- ✓ To find out how much information could be retained in sensory memory, early researchers used a method called the Whole report procedure. In this method, subjects looked for a fraction of a second at a visual display of nine items as the one shown below.

B X O
R T P
W Q L

- ✓ They were then asked to recall as many of the items as they could. On average subjects could remember only about four of the nine items. Researchers interpreted this as evidence that the capacity of sensory memory was only four items.
- ✓ Anyway, Sperling devised a method called the Partial report procedure. Like the earlier researchers, he used a 3×3 matrix of letters and flashed the array for a fraction of a second. However, unlike earlier researchers, he asked the subjects to report only one row of the array. Immediately after the presentation of the array of letters, a high, medium, or low tone was presented, indicating to the subjects which row to recall.
- ✓ Therefore the subjects could not focus on just one row. It turned out that, regardless of which row Sperling asked for, the subjects recall was nearly perfect, thus suggesting that the capacity of sensory memory was about nine items.
- ✓ Other experiments with larger arrays confirmed the nine item limit. So in the whole report method, as the subjects were reporting what they saw, their sensory memory of the array was decaying. By the time the subjects reported about four of the stimuli, the memory had already decayed. Sperling's procedure, however, avoided this problem.

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